

ORDER UNDER APPEAL



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

MARION STONE) NATURAL RESOURCES PROTECTION ACT
Scarborough, Cumberland County) SAND DUNE ALTERATION
STONE REVETMENT)
L-24089-4H-A-N (denial)) FINDINGS OF FACT AND ORDER
*(CorrectedOrder)	

Pursuant to the provisions of 38 M.R.S.A. Sections 480-A et seq. and Chapter 355 (Coastal Sand Dune Rules, or Rules) of the Department's Regulations, the Department of Environmental Protection has considered the application of MARION STONE with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. Summary: The applicant owns 41,360 square feet of property within a coastal sand dune system in the Town of Scarborough. The applicant proposes to construct a 200 foot-long stone revetment to replace an existing vertical timber bulkhead seawall that was damaged during a storm event in April of 2007. The proposed revetment would be composed of three layers of stones, anchored with toe stones weighing four to five tons. The proposed structure would consist of a layer of bedding stones, an under layer of 1-1/2 foot stone, and would be topped with a fitted layer of armor stones measuring 3 to 4 feet in diameter. Total thickness of the stones would be approximately six feet and the structure would extend approximately 24 feet in width from the seaward toe to the landward edge. The proposed revetment would occupy a surface area of 4,800 square feet and would consist of approximately 1,110 cubic yards, or approximately 75 truckloads, of boulders and large stones. To transition the stone revetment into structures on abutting properties, the applicant proposes to install two thirty foot-long sections of curved fiberglass sheet pile, driven 20 feet into the dune. The sheet pile would be faced with 2 inch x 10 inch pressure treated timbers and backed with a 15 foot-wide layer of stone reinforcement topped with sand and beach grass. The project design was revised several times while undergoing Department review. The final design is shown on a plan set entitled, "Stone Property Beachfront Protection", drawn by Baker Design Consultants, dated May 31, 2007, and last revised on October 28, 2009. The project site is located at 14 Harmon Street and is comprised of Lots #16 and #17 on the Town of Scarborough's Tax Map 18.

B. Current Use of Site: The applicant's property is currently developed with a house, driveway and landscaping. The southerly portion of the property, Tax Lot #17, is partially developed. Native vegetation covers the interior portion of the lot. Pursuant to

38 M.R.S.A. §480-W, temporary emergency riprap was placed on the northerly half of the applicant's property in 2007 after the timber bulkhead was damaged.

The frontal dune along this developed section of Scarborough Beach contains a contiguous, narrow wooden bulkhead seawall approximately 1/3 of a mile long. The footprint of the wooden bulkhead is relatively small, approximately one foot in width. Staff from Maine Geological Survey (MGS) reviewed the project and noted that the existing wall causes some beach scour due to wave reflection; however, sand is often washed over the bulkhead during storm events. American Beach Grass and other native dune species have thrived between the bulkhead and the residences located along this stretch of seawalled coastline. The level of sand seaward of the wall typically changes on the order of 2-3 feet per season, with sediment being eroded and rock cobbles exposed during the winter and sediment returning and covering the cobbles in the summer. According to MGS, the entire seawalled stretch of residential development along the beach was extensively overtopped in the April 2007 storm, leaving overwash deposits as far as 130 feet into the dune landward of the seawall location on the applicant's property. The wooden bulkhead in front of the applicant's house was extensively damaged during that storm. The timber bulkhead was also damaged on an abutting property to the north. This abutting bulkhead section was restored to pre-existing condition in accordance with Section 16 of Chapter 305, the Natural Resources Protection Act (NRPA), Permit by Rule notification program. At that time, the landward side of the repaired bulkhead was restored with replacement sand and beach grass plantings.

2. STANDARDS FOR ALL PROJECTS:

In its analysis of whether a proposed project meets the criteria of the NRPA, the Department considers whether an applicant has demonstrated that the project meets the standards set forth in the Coastal Sand Dune Rules, which interpret and elaborate on the statutory criteria. The following standards apply to proposed projects located in any portion of the sand dune system.

A. DEVELOPMENT ON INDIVIDUAL LOTS: The applicant's lot is currently 23% developed. With construction of the proposed revetment, the development coverage would increase to 37%, which is less than the maximum coverage of 40% allowed in Chapter 355(6)(B)(1). The Department finds that the proposed project meets the standards for development coverage on individual lots.

B. DESIGNATED ESSENTIAL HABITAT AND SIGNIFICANT WILDLIFE HABITAT: No designated essential habitat or significant wildlife habitat were identified on the applicant's lot. The lower beach area in front of the lot is mapped as Significant Wildlife Habitat, specifically Tidal Waterfowl and Wading Bird habitat. No impacts to this habitat are anticipated from the proposed project, according to a wildlife biologist from the Maine Department of Inland Fisheries and Wildlife (MDIFW). Based on this information, the nature of the proposed project and the proposed project's location, the Department finds that the proposed activity will not unreasonably harm any designated essential habitat or significant wildlife habitat.

C. LEGAL ACCESS: Pursuant to the Rules, a proposed project may not unreasonably interfere with legal access to or use of the public resource. No public accessway is located on the property at issue. A private right of way, approximately 30 feet in width, separates the applicant's two lots. The proposed structure would be at the seaward terminus of this right of way. A stairway to the beach is proposed over the revetment near the end of the right of way. The Department finds that the project will not interfere with legal access to or use of the public resources.

D. MITIGATION AND ENHANCEMENT: In accordance with Chapter 355 (2)(D), the department may require mitigation and enhancement measures to mitigate for on-site project impacts that interfere with the natural supply or movement of sand or gravel or that may increase the erosion hazard to the sand dune system. The applicant is proposing, as mitigation, to add sand and to plant dune grass above and behind the proposed revetment. Coastal geologists from MGS favor dune nourishing and plantings as mitigation in many coastal sand dune shoreline stabilization projects. However, in this case, MGS concluded that the benefits of adding sand and dune grass plantings behind the proposed revetment would not outweigh the negative impacts on the frontal dune resulting from physical placement of the structure itself. Therefore, the Department finds that the proposed measures do not adequately mitigate for the proposed project's potential to interfere with the natural supply and movement of sand or gravel within the sand dune system.

3. STANDARDS FOR FRONTAL DUNE PROJECTS- SEAWALL RECONSTRUCTION WITH ALTERNATIVE DIMENSIONS AND LOCATION:

Chapter 355, Section 3(H) defines coastal sand dune systems as:

Sand and gravel deposits within a marine beach system, including, but not limited to, beach berms, frontal dunes, dune ridges, back dunes and other sand and gravel areas deposited by wave or wind action. Coastal sand dune systems may extend into coastal wetlands. Coastal sand dune systems include dunes that may have been artificially created, dunes that may have been altered by development activity, and dunes supported by sand fencing or stabilization structures. Coastal sand dune systems naturally migrate landward through the process of overwash.

Under the provision of Section 5(E) of the Rules, no new seawall or similar structure may be constructed in the sand dune system. Replacement seawalls of different dimensions or in a different location further landward are allowed only if the Department determines that the replacement structure would be less damaging to the coastal sand dune system and to adjacent properties than would a replacement structure of the same design and location.

In order to make a determination of the potential impact of a different seawall design on the sand dune system and on abutting properties, MGS staff visited the site several times and submitted three memoranda with review comments on several potential versions of the project proposed by the applicant.

In response to initial MGS review comments, the applicant retained the services of Woods Hole Group (WHG), a Massachusetts-based coastal engineering firm, to refine the project design. On November 18, 2008 the applicant submitted a technical memorandum from WHG which included an evaluation of the coastal geologic processes at the site and the likely effects of two proposed conceptual design alternatives, a vertical bulkhead and a sloped stone revetment. Neither design alternative was an in-kind replacement of the existing structure. The vertical bulkhead alternative considered in the analysis included stone reinforcement behind fiberglass sheet piling with timber facing. MGS reviewed this report and subsequent project revisions submitted by the applicant and commented on the following aspects of the project:

Coastal Sand Dune Rules: The Chapter 355 requirement that a seawall of a different design must be "less damaging to the coastal sand dune system and to adjacent properties than would a replacement structure of the same design" does not specify whether the merits are measured in the short term (measured in years) or the long term (measured in decades). In its analysis, MGS staff considered the following questions: Must short-term and long-term impacts to the sand budget both be positive? Can short-term negative impacts be outweighed by potentially positive long-term impacts? Is a significant structure of 1,100 cubic yards of engineered rock works in a frontal dune consistent with development restrictions and the prohibition of new seawalls in the Coastal Sand Dune Rules?

To answer these questions, MGS used a sediment (sand) budget analysis to estimate impacts of the alternatives on the coastal sand dune system. The sediment budget in the WHG analysis used a reflection coefficient from each structure in its calculations. This analysis showed that sloped revetment structures typically reflect less energy and result in less sand loss during individual storm events. The WHG analysis addressed only storm conditions; that is, for events lasting for a period of hours. MGS noted the significant footprint increase of the proposed revetment and commented that if the sand currently located within the footprint of the proposed structure was redistributed on remaining dune surfaces as proposed by the applicant, construction of the revetment structure would result in the immediate physical loss of nearly 4,800 square feet of potentially functioning frontal dune area in comparison to the alternative of in-kind replacement of the existing structure and replacement of washed out sand and dune vegetation.

The WHG analysis showed that both design alternatives were expected to receive significant damage in a 10-year storm event at high tide with both experiencing structural failure during a 50-year storm event at high tide. MGS commented that stones dislodged from the revetment during these storm events could potentially be carried to abutting properties with unknown results. While engineered stone revetments have been installed in some locations in the coastal sand dune system, in all such cases the new structure's footprint was over a pre-existing engineered footprint, which is not the case at the project site.

Storm Flooding and Sand Transport: Coastal flooding and washover (sand transport landward of the seawall) is to be expected in the frontal dune at this site. As noted above, MGS has documented sand transport over 100 feet landward during past storm events at the project site. The WHG submitted calculations on overtopping and wave runup that

showed greater overtopping and sand transport for the vertical bulkhead alternative than for the proposed stone revetment. Dune and seawall overtopping is a process required for the natural transfer of sediment from the beach into the dune system, although it needs to be balanced in order to limit damage to structures behind the bulkhead or revetment. In a memorandum dated March 23, 2009, the applicant's consultant stated that the amount of material exchanged during a significant storm event will be approximately the same for the existing bulkhead and either of the alternative replacement structures.

Energy Reflection and Wave Dynamics at Revetment Ends: The applicant's original design included large granite abutments at the revetment ends. MGS stated that these energy focal points would increase the potential for end-effect damage on abutting properties. WHG developed a revised revetment design which included curved sheet piling in the transition areas adjacent to abutting properties. MGS staff reviewed the revised design in memoranda dated February 25, 2009 and September 2, 2009. WHG stated that "the curved timber solution offers a gradual transition between the sloped revetment and the vertical bulkhead to maintain any impact entirely on the applicant's property". MGS remained concerned that splash over that was once perpendicular to the shoreline could become more concentrated in the direction of the abutting lots with the curved wall. MGS stated that overtopping in the transition areas could result in increased flooding on adjacent properties and increased hydrostatic loading with a likely increase in seaward-directed forces imparted to neighboring seawalls. After observing wave refraction, runup, reflection and interaction patterns on sloped shorelines and curved seawalls during recent coastal storm events, MGS concluded that the resultant complex and forceful overtopping would be extremely difficult to model with certainty. MGS stated that the orientation of the curved wall could redirect wave reflection at an angle to the beach potentially creating a rip-current type of flow across the sandy beach resulting in preferential erosion on the seaward side of the proposed revetment.

Based on the immediate impact of the proposed structure's footprint, the displacement of a significant amount of functional dune area, and on MGS's determination of the increased potential for erosion on the dune and abutting properties, the Department finds that the applicant has not demonstrated conclusively that the proposed project will be less damaging to the coastal sand dune system and to adjacent properties. Therefore, the proposed project does not meet the standards for a replacement seawall of different dimensions or location in a coastal sand dune.

4. OTHER CONSIDERATIONS:

The Department did not identify any other issues involving existing scenic, aesthetic, or navigational uses, soil erosion, habitat or fisheries, the natural flow of water, water quality, or flooding.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 480-A et seq.:

- A. The proposed activity would unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses in that adjacent properties may be damaged by construction of the proposed project.

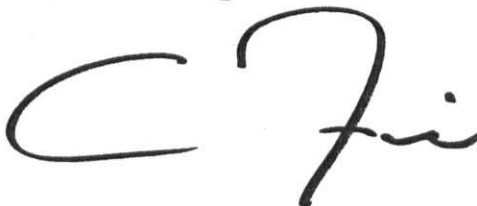
- B. The proposed activity would cause unreasonable erosion of soil or sediment and will unreasonably inhibit the natural transfer of soil from the terrestrial to the marine environment.
- C. The proposed activity would not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, or freshwater, estuarine or marine fisheries or other aquatic life.
- D. The proposed activity would not unreasonably interfere with the natural flow of any surface or subsurface waters.
- E. The proposed activity would not violate any state water quality law including those governing the classifications of the State's waters.
- F. The proposed activity would not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- G. The proposed activity would unreasonably interfere with the natural supply or movement of sand within or to the sand dune system and would unreasonably increase the erosion hazard to the sand dune system in that the curved wall could redirect wave reflection at an angle to the beach potentially creating a rip-current type of flow across the sandy beach resulting in preferential erosion on the seaward side of the proposed revetment.

THEREFORE, the Department DENIES the above noted application of MARION STONE to construct a replacement seawall as described above.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CORRECTING THE ORDER DATED 01/13/10. The effective date and expiration date remain the same as in the original.



This permit has been digitally signed by Andrew C. Fisk on behalf of Commissioner David P. Littell. It is digitally signed pursuant to authority under 10 M.R.S.A. § 9418. It has been filed with the Board of Environmental Protection as of the signature date
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PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES...

*wb/124089an



DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated: May 2004

Contact: (207) 287-2811

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's General Laws, 38 M.R.S.A. § 341-D(4), and its Rules Concerning the Processing of Applications and Other Administrative Matters (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted:

1. *Aggrieved Status.* Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.

6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.

7. *New or additional evidence to be offered.* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5)

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.

2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.

3. *The filing of an appeal does not operate as a stay to any decision.* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

II APPEALS TO MAINE SUPERIOR COURT

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

ADDITIONAL INFORMATION: If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.
